

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference P/63937.WO1/GPTX18	FOR FURTHER ACTION	See Form PCT/IPEA/416			
F/03937.WOT/GFTX10		Priority date (day/month/year)			
International application No.	International filing date (day/month/year)	03.12.2003			
PCT/EP2004/053042	22.11.2004	00.12.2000			
International Patent Classification (IPC) or national classification and IPC					
H04B10/17	•				
Applicant MARCONI COMMUNICATIONS SF	Σ Δ				
WARCON COMMONICATIONS ST					
This report is the international pre Authority under Article 35 and trait	eliminary examination report, establish nsmitted to the applicant according to	ned by this International Preliminary Examining Article 36.			
	of 5 sheets, including this cover shee				
	A LA ANALYSE Communications				
5. This report is also accompanied a	o the International Bureau) a total of	sheets, as follows:			
a. sent to the applicant and to the International Bureau) a total of sheets, as follows: sheets of the description, claims and/or drawings which have been amended and are the basis of this report					
and/or sheets containi	ing rectifications authorized by this Au	uthority (see Rule 70.16 and Section 607 of the			
Administrative Instruct	tions).				
sheets which superse	de earlier sheets, but which this Authories in the international application as file	ority considers contain an amendment that goes ed, as indicated in item 4 of Box No. I and the			
Supplemental Box.					
	Sureau only) a total of (indicate type a	and number of electronic carrier(s)) , containing a			
I seemend listing and or tal	bles related thereto, in computer read Listing (see Section 802 of the Admi	able following, as indicated in the copplementar			
Box Relating to Sequence	, Listing (See Occiden See of the Figure	•			
4. This report contains indications re	elating to the following items:				
☑ Box No. I Basis of the op	inion				
☐ Box No. II Priority					
☐ Box No. III Non-establishn	nent of opinion with regard to novelty,	, inventive step and industrial applicability			
☐ Box No. IV Lack of unity of					
M Box No V Beasoned state	ement under Article 35(2) with regard	to novelty, inventive step or industrial			
applicability; ci	tations and explanations supporting s	such statement			
☐ Box No. VI Certain docum					
☐ Box No. VIII Certain observ	ations on the international application	1			
Date of submission of the demand	Date of com	pletion of this report			
23.09.2005	08.03.200	06			
Name and mailing address of the internation	onal Authorized C	Officer			
preliminary examining authority: European Patent Office					
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. PCT/EP2004/053042

	Box No. I	Basis of the report	
1.	. With regard to the language , this report is based on the international application in the language in which it vifiled, unless otherwise indicated under this item.		
	☐ This reward	eport is based on translations from the original language into the following language , is the language of a translation furnished for the purposes of:	
	□ pu	ernational search (under Rules 12.3 and 23.1(b)) blication of the international application (under Rule 12.4) ernational preliminary examination (under Rules 55.2 and/or 55.3)	
2.	have been	d to the elements* of the international application, this report is based on <i>(replacement sheets which</i> In furnished to the receiving Office in response to an invitation under Article 14 are referred to in this Ioriginally filed" and are not annexed to this report):	
	Description	n, Pages	
	1-11	as originally filed	
	Claims, Nu	mbers	
	1-9	as originally filed	
	Drawings,	Sheets	
	1/2-2/2	as originally filed	
	□ a seq	uence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing	
3.	☐ The a	mendments have resulted in the cancellation of:	
		e description, pages e claims, Nos.	
	□ the	e drawings, sheets/figs	
		e sequence listing <i>(specify)</i> : y table(s) related to sequence listing <i>(specify)</i> :	
4.	had not be	eport has been established as if (some of) the amendments annexed to this report and listed below een made, since they have been considered to go beyond the disclosure as filed, as indicated in the ntal Box (Rule 70.2(c)).	
		e description, pages e claims, Nos.	
	☐ the	e drawings, sheets/figs	
		e sequence listing <i>(specify)</i> : y table(s) related to sequence listing <i>(specify)</i> :	
	* Tf is	tem 4 applies, some or all of these sheets may be marked "superseded."	



International application No. PCT/EP2004/053042

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N) Yes: Claims 2-9

No: Claims 1

Inventive step (IS) Yes: Claims 3-9

No: Claims 1-2

Industrial applicability (IA) Yes: Claims 1-9

No: Claims

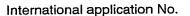
2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet





PCT/EP2004/053042

Re Item V

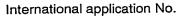
Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1. The document D4 was not cited in the international search report. A copy of the document is appended hereto.
 - D1: US-B1-6 421 168 (DUERKSEN GARY ET AL) 16 July 2002 (2002-07-16)
 - D2: HARUO OKAMURA: "AUTOMATIC OPTICAL LOSS COMPENSATION WITH ERBIUM-DOPED FIBER AMPLIFIER" JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, vol. 10, no. 8, 1 August 1992 (1992-08-01), pages 1110-1116, XP000288348 ISSN: 0733-8724
 - D3: US-B1-6 175 436 (JACKEL JANET L) 16 January 2001 (2001-01-16)
 - D4: Saleheen: "CLOSED CYCLE LASING OF ASE NOISE IN A WDM RING NETWORK, Lasers and Electro-Optics, 2001, CLEO/Pacific Rim 2001, The 4th Pacific Rim Conference on, Volume 2, pp. II-558-II-559, ISBN 0-7803-6738-3
- 2 Document D4, see in particular the passages cited in the search report, discloses as in claim 1 (The references in parenthesis apply to the figures of D4):

A wavelength division multiplex optical ring network comprising optical fibre (figure 1) arranged in a ring configuration and a plurality of doped fibre optical amplifiers (EDFA) arranged in the ring, in which the spectral response in the ring is configured such that in use amplified spontaneous emission (ASE) noise circulates around the ring in a lasing mode(section 2., last sentence) to clamp the gain of each doped fibre optical amplifier (figure 3 and section 3. Results); characterised in that each optical amplifier includes respective control means (implicit) which in use control the optical amplifier to produce a substantially constant output power (figures 3 and 4: channel 4 is maintained at constant output power) or to maintain a substantially constant pump power.

Since all the features of claim 1 are known from D4, the claim lacks novelty in the sense of Article 33(1), (2) PCT.

3. The combination of the features of dependent claim 3 is neither known from, nor





INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SEPARATE SHEET)

PCT/EP2004/053042

rendered obvious by, the available prior art D1-D4 for the following reason:

The document D4 discloses a WDM ring with constant output power control for each channel using feedback control loop, in which gain clamping due to ASE lasing along the ring occurs at a single channel.

Therefore the claim differs from this document in that a loss of ASE lasing peak is detected and in response the optical amplifier is switch to a gain control mode.

The problem to be solved can be reagrded as modifying the network in order to improve its performance in the case, where no ASE lasing is detected.

The above problem is not addressed nor hinted at in D4.

Further, the solution, which is to switch the operation of the amplifiers to a gain control mode before the lasing peak is re-established, is not obvious either, since it requires a different amplifier type.

It is suggested therefore that a new independent claim be drafted to include these features, bearing in mind that the features known in combination from D4 should be placed in the preamble of such a claim in accordance with Rule 6.3(b) PCT.

Dependent claims 4-9 would be allowable with such a revised independent claim.

Re Item VII

Certain defects in the international application

- 1. To meet the requirements of Rule 5.1(a)(ii) PCT, the document D4 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.
- 2. If an amended set of claims is filed, then the description has to be adapted accordingly. The applicant is further requested to provide clear indication from where in the original application the amendments were derived, cf. Article 19(2) PCT.